CLAIM AMENDMENTS

1. (currently amended) A method for the wet mechanical processing of a mixture of materials using ~~, in particular all kinds of waste, consisting of inert materials, water as well as organic materials having a water-soluble and a bioconvertible part,~~ ~~wherein~~ water ~~is used~~ as solvent, detergent and separating agent, ~~characterized in that~~ the method comprising the steps of:

continuously mixing the mixture of materials ~~is at first continuously mixed~~ in a mixer [[(4)]] with water as separating agent and detergent, without separating off compounds of the mixture, until a dry substance content of 15% to 25% is ~~adjusted~~ obtained, ~~that in a first step~~

a) thereafter

discharging the mixture of materials ~~is discharged~~ from the mixer [[(4)]] by means of a conveyor [[(9)]], ~~wherein by the addition of~~

adding water ~~(11, 12) the~~ to the mixture such that light components remain dissolved in a solid/liquid mixture having a dry substance content of 10% to 20% ~~, whereas the~~ and heavy components settle and are separated by means of the conveyor as a first inert heavy fraction [[(15)]] having a grain size of > 25 mm,

sieving off, rinsing, and pressing from the remaining solid/liquid mixture [[(14)]], organic light materials having a grain size of 30 to 120 mm ~~are sieved off, reached and pressed~~ as a first organic light fraction [[(22)]], ~~that in a second step~~

b) thereafter separating by sieving and rinsing from the remaining suspension having an adjusted dry substance content of 6% to 12% ~~are separated out at~~ first inert heavy materials [[(28)]] having a grain size of 2-25 mm by gravity and subsequently further organic light materials [[(32)]] having a grain size of 3 to 30 mm ~~by sieving and rinsing, that in a third step~~

c) thereafter separating from the remaining suspension having an adjusted dry substance content of 3% to 8% [[,]] further inert heavy materials [[(40)]] having a grain size of < 2 mm ~~are separated out~~ by centrifugal forces and subsequently separating by sieving and rinsing further organic light materials [[(49)]] having a grain size of 150 µm to 3 mm ~~by sieving and rinsing~~.

2. (currently amended) The method according to claim 1, ~~characterized in that~~ wherein in ~~the first to third~~ steps a) to c) [[,]] fresh water or recirculated water consisting of unprocessed and/or purified filtrate or respectively sewage water of ~~the second and/or third~~ step b) or c) is used as solvent, detergent or respectively separating agent.

3. (currently amended) The method according to claim 1, ~~characterized in that in the pre-step of the mixing,~~ further comprising before step a) the steps of

conveying the mixture of materials ~~is conveyed~~ into the mixer [[(4)]] by means of a dosing conveyor [[(2)]] and [[that]]

adding water already in the conveyor [[(2)]] water ~~, preferably recirculated water, is added~~ for improving the wetting ability of the mixture of materials and for pre-mixing.

4. (currently amended) The method according to claim 1~~, characterized in that~~ wherein in ~~the first~~ step a) [[the]] discharge [[(8)]] from the mixer [[(4)]] is separated by means of a spiral conveyor [[(9)]] that ~~disposes of~~ has a sufficient free section area in [[the]] an upper part, so that a portion [[part,]] principally consisting of light materials [[,]] is directly carried away into an upflow classifier [[(10)]] above the screw and that another portion [[part,]] principally consisting of heavy materials is further cleaned of light materials by means of rinsing water [[(13)]] and is discharged via the spiral conveyor [[(9)]].

5. (currently amended) The method according to claim 4~~, characterized in that~~ wherein in ~~the first~~ step a) the light materials [[(14)]] are transferred outward into ~~the sieving~~ a sieve [[(16)]] via [[the]] hydraulic pressure caused by ~~the filling~~ a

fill level in the mixer [[(4)]], ~~the pre-pressure via the~~ pressure created by rinsing water pumps [[(54, 55)]] as well as [[the]] by a fresh water supply [[(13)]] via the upflow classifier [[(10)]].

6. (currently amended) The method according to claim 4~~,~~ ~~characterized in that~~ wherein in ~~the first~~ step a) the heavy materials in the conveyor [[(9)]] are rinsed with filtrate of ~~the second~~ step [[(11)]] b) and purified filtrate of the third step [[(12)]] as well as with fresh water [[(13)]] in a cascaded manner ~~, wherein the~~ such that settling heavy materials are cleaned of [[the]] dissolved organic material, [[the]] light materials and [[the]] finer heavy materials.

7. (currently amended) The method according to claim 6~~,~~ ~~characterized in that~~ wherein in ~~the first~~ step a), compressed air is additionally employed for rinsing the heavy materials in the conveyor [[(9)]].

8. (currently amended) The method according to claim 6~~,~~ ~~characterized in that~~ wherein the inert heavy materials [[(15)]] that have been discharged in ~~the first~~ step a) are dumped directly or after a [[post-]] rotting or ~~respectively~~ deterioration.

9. (currently amended) The method according to claim 6~~,~~ ~~characterized in that~~ wherein the inert heavy materials [[(15)]]

that have been discharged in ~~the first~~ step a) are crushed via a breaker and after the crushing are either added to the mixture of materials of ~~the second~~ step b) ~~, in the case of a crushing~~ when crushed to less than 15 mm or the mixture of materials of ~~the third~~ step c) or ~~, in the case of a crushing~~ when crushed to less than 3 mm for further purification, wherein before the crushing, metals are separated out by a metal separator.

10. (currently amended) The method according to claim 5~~, characterized in that~~ wherein in ~~the first~~ step a), the light materials [[(14)]] are rinsed with purified filtrate of ~~the third~~ step c) ~~(18) and/~~ or with fresh water during [[the]] sieving [[(16)]].

11. (currently amended) The method according to claim 10~~, characterized in that~~ wherein in ~~the first~~ step a) the sieved light materials [[(22.1)]] are dehydrated by a single-step or multiple-step mechanical dehydration.

12. (currently amended) The method according to claim 11~~, characterized in that~~ wherein the light materials [[(22.1)]] are crushed before being pressed ~~off (19),~~ so that ~~among others~~ a higher dehydration rate of biogenous organic compounds can be achieved.

13. (currently amended) The method according to claim 1~~, characterized in that the~~ wherein filtrates [[(17, 21)]] of ~~the first~~ step a) are conveyed into a sedimentation basin [[(23)]] of ~~the second~~ step b) due to the hydraulic pressure.

14. (currently amended) The method according to claim 13~~, characterized in that~~ wherein in ~~the second~~ step b) [[, the]] filtrates [[(17, 21)]] of ~~the first~~ step a) are rinsed in a conveyor [[(24)]] with air [[and/]] or with a filtrate from ~~the third~~ step c) ~~(25) and/~~ or with fresh water [[(26)]] in a cascaded manner, wherein further heavy materials [[(28)]] are cleaned of [[the]] dissolved organic material, [[the]] light materials ~~as well as the~~ and finer adhering heavy materials.

15. (currently amended) The method according to claim 14~~, characterized in that the~~ wherein light materials ~~(27) that~~ are carried away from the sedimentation basin [[(23)]] via an overflow to [[reach]] a sieve [[(29)]] where they are sieved, rinsed and pressed [[off]].

16. (currently amended) The method according to claim 15~~, characterized in that the~~ wherein light materials [[(27)]] that have been separated out via the sieve [[(29)]] are dehydrated by a single-step or multiple-step mechanical dehydration.

17. (currently amended) The method according to claim 1~~, characterized in that the~~ wherein a filtrate [[(33)]] of ~~the second~~ step b) at first is conveyed into a filtrate vessel and therefrom is conveyed into a hydrocyclone [[(36)]] in ~~the third~~ step c), by means of which, according to [[the]] dry substance content and viscosity of the filtrate, heavy materials of a grain size up to 50 - 150 µm are [[being]] separated out.

18. (currently amended) The method according to claim 17 ~~, characterized in that the~~ wherein an underflow [[(37.2)]] of the hydrocyclone is classified and washed by a sorting spiral [[(38)]] by addition of recirculated water [[(58)]], wherein the purified heavy fraction is washed and dehydrated via a sedimentation basin having a screw discharge [[(39)]] by rinsing with fresh water [[(37.3)]] as well as the heavy fraction that is loaded with organic material and the washing water [[(41)]] is recirculated into the filtrate vessel [[(34)]] of ~~the second~~ step b).

19. (currently amended) The method according to claim 17~~, characterized in that~~ wherein the underflow [[(37.2)]] of the hydrocyclone is washed and dehydrated via a vibration sieve with fresh water rinsing.

20. (currently amended) The method according to claim 17~~, characterized in that the~~ wherein overflow [[(37.1)]] of the hydrocyclone is conveyed to a vibration sieve ~~(43), the~~ from which sieved-off particles are rinsed with fresh water [[and/]] or filtrate [[, the]] and pre-thickened filter cake [[(44)]] is dehydrated mechanically via a screw press [[es (45)]] and [[the]] pressed-out water is recirculated into the vibration sieve [[(43)]].

21. (currently amended) The method according to claim 20~~, characterized in that the~~ wherein filtrate [[(50)]] from the vibration sieve [[(43)]] is ~~completely or partially~~ processed in an aerobic manner or in an anaerobic manner and subsequently recirculated into the process.

22. (currently amended) The method according to claim 21~~, characterized in that the~~ wherein filtrate [[(50)]] is conveyed into a further filtrate vessel [[(52),]] wherein [[the]] a residence time of the filtrate [[(50)]] in this vessel as well as [[the]] a residence time of the filtrate [[(33)]] of ~~the second~~ step b) in the filtrate vessel ~~(34) that is connected~~ upstream of the hydrocyclone by a respective dimensioning of the vessels is selected such that ~~a hydrolysis of~~ the filtrates ~~is effected~~ are hydrolized.

23. (currently amended) The method according to claim 22~~, characterized in that~~ wherein a partial stream of [[the]] filtrate [[(53)]] from the filtrate vessel [[(52)]] is purified via an anaerobic sewage treatment and [[the]] a purified discharge from the sewage treatment is re-used as recirculated water in the process ~~, wherein by~~ such that with a low pH of the recirculated water [[,]] a higher solubility of the organic fraction can be achieved.

24. (currently amended) The method according to claim 21~~, characterized in that the~~ wherein filtrate of ~~the third~~ step c) that has been processed in an aerobic or anaerobic manner is cleaned of pollutants [[and/]] or of salts before being recirculated into the process as recirculated water via microfiltration, nanofiltration or reverse osmosis systems, ~~wherein via~~ such that the purified recirculated water [[,]] reduces the pollutant concentration of the mixture of materials in the process ~~is reduced~~.

25. (currently amended) The method according to claim 21~~, characterized in that~~ wherein the recirculated ~~water (57)~~ filtrate is heated up to 30-85° before recirculation into the process via a heat exchanger [[(56)]] for improving [[the]] separating performance of the total system, dehydration rate of the organic fraction, [[the]] solubility of the fermentable organic

material and [[the]] sterilization of the individual fractions as well as for ~~adjustment of the~~ setting a temperature of 35° or 55° that is required for the fermentation of sewage water [[(53)]] [[and/]] or of [[the]] light material fractions [[(22, 32, 49)]].

26. (currently amended) The method according to claim 21~~, characterized in that~~ wherein for [[the]] fermentation of the sewage water [[(53)]] as well as of ~~all or individual~~ light material fractions [[(22, 32, 49)]], a ~~method known in the prior art, in particular the~~ dry ~~fermentation process~~ or ~~also the~~ wet fermentation process is employed.

27. (currently amended) The method according to claim 26~~, characterized in that~~ wherein the light material fractions [[(22, 32, 49)]] that have been separated out in ~~the first to the third~~ steps a) to c) during the fermentation are adjusted to a predetermined dehydration rate and ~~that a post-crushing is performed upon them~~ they are then crushed.

28. (currently amended) The method according to claim 1~~, characterized in that~~ wherein the light material fractions [[(22, 32, 49)]] that have been separated out in ~~the first to the third~~ steps a) to c) are conveyed into a hydrolizer [[ysis]] or a percolator [[ion]], whereby [[in]] the light materials after

[[the]] hydrolysis or the percolation have better mechanical dehydration properties.

29. (currently amended) The method according to claim 1~~, characterized in that~~ wherein the light materials [[(22, 32, 49)]] that have been separated out during the first to ~~the third~~ step c) are dehydrated principally mechanically [[and/]] or are thermally or thermally-biologically after-treated and dried for [[the]] energy utilization or utilization as material in the form of a dry fertilizer.

30. (currently amended) The method according to claim 29~~, characterized in that~~ wherein the thermally dried light material fractions [[(22, 32, 49)]] are used as dry fertilizer pellets after a pelletization for the improvement of [[the]] plant tolerance.

31. (currently amended) The method according to claim 29~~, characterized in that~~ wherein the dried light fractions [[(22, 32, 49)]] are employed as pelletization auxiliary means for [[the]] pelletization of substitute combustibles as packaging waste or reprocessed sieve overflow from mechanical-biological processing plants, whereby at the same time [[, the]] thermal stability of the combustible pellets in ~~the use in~~ shaft gasification methods is improved.

32. (currently amended) The method according to claim 1~~, characterized in that the~~ wherein sludge from the aerobic and anaerobic recirculated water processing is utilized due to a remaining pollution load separately from the purified light material fractions [[(22, 32, 49)]].

33. (currently amended) The method according to claim 1~~, characterized in that the~~ wherein very fine heavy materials that remain in the filtrate after ~~the third~~ step c) and remaining very fine material are separated along with the sludge from the purification of the recirculated water.

34. (currently amended) The method according to claim 1~~, characterized in that the~~ wherein control [[ling]] of the quantities of the circulation, fresh and sewage waters is effected ~~dependently~~ depending on the viscosity of the recirculated water and the current consumption of the mixer [[(4)]].

35. (currently amended) A device for performing the method according claim 1, consisting of the serial ~~mounting~~ connection of

a dosing conveyor [[(2)]], a mixer [[(4)]], a spiral conveyor [[(9)]], an upflow classifier [[(10)]], a sieving device [[(16)]] and a press [[(19)]]

in ~~a first~~ step a) of the method
a sedimentation basin [[(23)]], a screw discharge [[(24)]], a sieving device [[(29)]] and a filtrate vessel [[(34)]];
in ~~a second~~ step b) of the method
a rotary pump [[(35)]], a hydrocyclone [[(36)]], a vibration sieve [[(43)]] and a screw press [[(45)]], as well as, upstream of the hydrocyclone, a sorting spiral [[(38)]], a calming bath with sand discharge [[(39)]]; and
in ~~a third~~ step c) of the method
from the remaining suspension having an adjusted dry substance content of 3% to 8% [[,]] further inert heavy materials [[(40)]] having a grain size of < 2 mm are separated out by centrifugal forces and subsequently further organic light materials [[(49)]] having a grain size of 150 µm to 3 mm are separated by sieving and rinsing.

36. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the dosing conveyor [[(2)]] of ~~the first~~ step a) of the method is a spiral conveyor.

37. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the mixer [[(4)]] of ~~the first~~

step a) of the method is designed as a standing vessel having a stirrer [[(7)]] that is preferably driven from below, wherein [[the]] discharge of the suspension is ~~provided~~ in [[the]] a lower area of the mixer.

38. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the spiral conveyor [[(9)]] of ~~the first~~ step a) of the method has a maximum diameter of 300 mm and a thread pitch of about 150 mm as well as in [[the]] an upper area a free flow cross section of about 150 mm.

39. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the sieving device [[(16)]] of ~~the first~~ step a) of the method is a sieving screw that beside the function of sieving and washing also ~~leads to a pressing of~~ presses the light materials [[(22.1)]].

40. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the press [[(19)]] of ~~the first~~ step a) of the method consists of one or more screw presses.

41. (currently amended) The device according to claim 35~~, characterized in that~~ wherein the sedimentation basin [[(23)]] of ~~the second~~ step b) ~~has the structure of~~ is a sand classifier.